BOOK : 3.15

GOVERNMENT OF KARNATAKA

# A STUDY OF MATERNAL MORTALITY IN MYSORE DISTRICT

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POPULATION CENTRE
BANGALORE
July , 1997

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Government of Karnataka

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## INTRODUCTION

The level of maternal mortality is not known correctly in India though some estimates show a level as high as 500 to 600 maternal deaths per 100,000 live-births. The National Family Health Survey (NFHS) data reveal that maternal mortality rate in India during 1992-93 is 437 per 100,000 live births. This level is very high as compared to the level of developed countries where the maternal deaths are as low as 20 to 30 per 100,000 live births. It is however, desirable to reduce the level of maternal mortality in India and its states by improving reproductive health of the women. But unless the reasons and quantum of maternal deaths are known it may be difficult to evolve specific measure to reduce it. In order to find out such aspects of maternal mortality, a survey was conducted by the Population Centre during 1990 in two districts of Karnataka viz., Gulbarga and Belgaum. The findings of the study revealed that the maternal ratio was about 600 per thousand live births. The maternal deaths were found to vary with biological, demographic socio-economic and medical factors. The causes of maternal deaths revealed that haemmorahage, unexpelled placenta, eclampsia, sepsis and tetanus accounted for about 70 per cent of the total maternal deaths and these were actually preventable through proper ante-natal and

post-natal care. Thus, some valuable information on maternal deaths is available though it is restricted to the two districts of northern Karnataka. It is therefore, felt it would be useful to undertake another field survey of similar nature in two districts from southern part of Karnataka. One district will be selected from each of the two revenue divisions viz., Bangalore and Mysore. The study would help in providing a comparative picture of maternal mortality across the state, so that suitable policy could be evolved for providing adequate reproductive health care services in order to reduce the quantum of maternal mortality. Accordingly, a field survey was undertaken in the Mysore district during February-March 1997. This report is prepared based on the field survey in Mysore district.

## OBJECTIVES OF THE STUDY

There are three main objectives of the study, viz:

a) to estimate the levels of materntal mortality in the rural areas of Mysore district.

b) to find out the causes of maternal mortality and to identify the different factors which are linked with maternal mortality.

c) to estimate the magnitude of maternal mortality that can be avoided in the community.

## METHODOLOGY

The study was based on household survey. The study was designed to examine the situation of maternal mortality in the rural areas of Mysore district as per objectives mentioned earlier. Ten PHCs were selected at random. From each selected PHC, a sample of 50 per cent sub-centres were selected at random. Once the sub-centres were selected, all the villages under these sub-centres were selected for the study. It can be observed from Table 1 that a total of 30 sub-centres, 91 villages were selected for the study. From each selected village various information on births, deaths, accessability and other infrastructure facilities were collected through the records and dairies of paramedical staff and from village schedule. The reference period for births and deaths was considered as 1st January 1996 to 31st December 1996. A thorough checking was done for identifying deaths of women in the age group (15-44) years irrespective of their marital status and causes of death. After collecting such information a scrutiny was done to identify the maternal deaths. Each of such household was taken as a sample for detailed investigation for understanding the

process of maternal death. The households having a birth during the reference period were separated out and 20 per cent of such households were selected at random for collecting information on various aspects of pregnancy and demographic characteristics of the women. In all 407 households having births were selected for detailed investigation.

Table 1: Number of PHCs,Sub-centres, Villages and Households

| | |
|---|---|
| PHCs | 10 |
| Sub-Centres | 30 |
| Villages | 91 |
| No.of households selected for detailed investigation | 407 |

The concept of maternal death used in this study is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated of the pregnancy or its management but not from accidental causes(as per definition of WHO).

## FIELD WORK

The field work was carried out by the staff of the Population Centre. To facilitate the field work two teams were formed and each team was entrusted to collected data from the randomly selected 5 PHCs . Each of the team member was given training for two days discussing all aspects of the study and details of the schedules. The teams visited all the selected PHCs and all the selected Sub-centres as per design of the study and collected information on villages. They interviewed the selected heads of the households and collected general information covering socio-economic and demographic aspects and interviewed the selected women who were in matenral risk covering different aspects of maternal situation and maternal mortality. Different types of schedules viz., Village Schedule, Household Schedule and Maternity Schedule were used for data colection. The schedule are given in the appendix. The field work was completed in about one month during mid February '97 and mid March '97.

## VILLAGE PROFILE

The general infrastucture facilities of the village may be an important aspect linked with the occurance of maternal deaths.

The villages were classified according to the size of the population and it can be observed from Table 2 that about 36 per cent of the selected villages were with population size of 500-999. This is followed by the villages of population size <500 and 1000-1999 constituting about 26 per cent and 23 per cent respectively. The large villages with population size 2000-2999 and villages with population size 3000-3999 constituted about 10 per cent and 3 per cent of the total selected villages respectively. However, the villages with population more than 4000 and above constituted only one per cent of the total.

Table 2: Distribution of the Selected Villages by the Size of Population

| Population Size | Percentage of the Villages |
|---|---|
| <500 | 26.4 |
| 500-999 | 36.3 |
| 1000-1999 | 23.1 |
| 2000-2999 | 9.9 |
| 3000-3999 | 3.3 |
| 4000+ | 1.0 |
| Total | 100.0 (N=91) |

The accessibility to the villages is one of the important factors so far as the infrastructure facilities are concerned. It can be observed from Table 3 that about 66 per cent of the selected villages are

connected with motorable roads and the rest are connected with mud-roads. In addition, about 9 per cent of the total selected villages are connected with railway line.

Table 3: Distribution of Selected Villages by Accessibility of Roads/Railways

| Villages connected Roads/Railways | Per cent |
|---|---|
| Motorable Roads | 65.9 |
| Mud Roads | 34.1 |
| Railways | 8.8 |
| Total | 100.0 (N=91) |

The availability of water is another important aspect. It can be observed from Table 4 that about 55 per cent of the total villages have tap water facilities and about 42 per cent have borewell facilities. It is only about 3 per cent of the villages have water facilities from open wells. The sources of water facilities refers only to the major sources.

Table 4: Distribution of Selected Villages by Major Sources of Water

| Major sources of water | Per cent |
|---|---|
| Tap | 54.9 |
| Bore well | 41.8 |
| Open well | 3.3 |
| Total | 100.0(N=91) |

It is revealed from the survey that all the villages have electricity though all the households do not have electricty. The facilities like Bank, Post and Telegraph Offices are not available in many selected villages.

The availability of government medical institution in the villages shows that about 44 per cent of the selected villages have medical institution within the village itself. About 25 per cent and about 15 per cent of the villages respectively have facilities of sub-centre and primary health centre within the village. It is only about 3 per cent of the selected villages have government hospital facility. However, most of the villages have sub-centre facilities within a proximate distance of 5 kms. and facilities of primary health centre within a proximate distance of 10 kms.

Table 5: Distribution of Selected Villages by Availability of Government Medical Institutions

| Facilities Available within the Village | Per cent |
|---|---|
| Sub-centres | 25.3 |
| PHCs | 15.4 |
| Hospitals | 3.3 |
| No facilities | 56.0 |
| Total | 100.0(N=91) |

It is also important to know as how many of the selected villages are having facilities of medical personnel within the village. It can be observed from Table 6 that about 21 per cent of the villages have allopathic doctors, about 31 per cent of them have ANMs and about 12 per cent of the villages have other medical practioners viz., Ayurvedic, Homeopathic and Unani. Regarding the availability of trained dai, about 64 per cent of the villages have trained dai. However, all the villages have untrained dai. Thus, the facilities of medical personnel among the selected villages are not very adequate.

Table 6: Distribution of Selected Villages by Availability of Health Personnel

| Health Personnel | Per cent |
|---|---|
| Allopathic Doctors | 20.9 |
| ANMs | 30.7 |
| Trained Dais | 63.7 |
| Other Medical Practitioners (Homeopathy, Ayurvedic, Unani Sidha, etc.) | 12.1 |

## CHARACTERISTICS OF THE SAMPLE POPULATION

According to the design of the study, information on households, population size, their religion and caste, age and sex composition, household income, education level, etc. were collected from the selected households. A total sample of households selected for collection of such information was 407. The types of the houses and the annual households income are the important indicators to assess the economic conditions of the respondents. It can be observed from Table 7 that most of the houses are mud house with tiled roof (about 58 per cent). It is only about 18 per cent of the households which are having pucca houses and about 20 per cent are having mud houses with thatched roof. Households which are living in huts accounts for about 5 per cent. Thus, the housing conditions of the respondent is of middle class categories.

Table 7: Distribution of Households by Type of Housing

| Type of Housing | Percentage |
|---|---|
| Hut | 4.9 |
| Mud House with Thatched Roof | 19.9 |
| Mud House with Tiled Roof | 57.5 |
| Pucca House | 17.7 |
| Total | 100.0 (N=407) |

The distribution of households by total annual income is presented in Table 8. It can be observed from the table that majority of the households are having an annual income between Rs.10,001 & Rs.20,000. It is about 43 per cent. The proportion of households with income less than or equal to Rs. 10,000 is about 31 per cent. The proportion of household with higher income of Rs.30,001 and above is about 14 per cent and about 12 per cent of the households have annual income of Rs. 20,001 to 30,000 thus by and large the sample households belongs to middle level income group.

Table 8: Distribution of the Households by Total Annual Income

| Income Level | Percentage of the Hoseholds |
|---|---|
| < Rs. 10,000 | 30.5 |
| Rs.10,001 to 20,000 | 43.0 |
| Rs.20,001 to 30,000 | 11.5 |
| Rs.30,001 and above | 13.8 |
| No Response | 1.2 |
| Total | 100.0 (N=407) |

The average size of the household is found as 6.1. The sex-ratio is favourable for females as the estimated sex ratio is 1031, i.e., there are 1031 females per 1000 males. The favourable sex-ratio for females may be due to the out migration of males particularly in the age group 15-24 to other areas (nearby urban areas) for education and employment.

Table 9: Distribution of Popualtion by Broad Age Group and Sex

| Age group | Males | Females | Total |
|---|---|---|---|
| 0-14 | 38.3 | 42.5 | 40.6 |
| 15-34 | 38.8 | 38.2 | 38.4 |
| 35-54 | 18.2 | 16.0 | 17.1 |
| 55+ | 4.7 | 3.3 | 3.9 |
| Total | 100.0 (N=1225) | 100.0 (N=1264) | 100.0 (N=2489) |

The age distribution of the sample population is presented in Table 9. It can be observed that about 41 per cent of the total population is in the age group 0-14 years. About 38 per cent is in the age group 15-34 years. About 17 per cent of the population is in the age group 35-54 years and only about 4 per cent is in the older age group 55 years and above. The general picture of the population made out of their distribution shows that the population is young as larger proportion of population is in the age group <15 years and only small proportion of population is in older age group. The proportion of female population in the age group <15 years is higher as compared to its male counter part and relatively lower in the subsequent age groups may be attributed to the fact that mortality level of males is relatively higher in the young age and mortality level of females is relatively high in the middle age groups. However, the overall longivity for both the sexes is not very high as only a small proportion of population is in the age group 55 years and above.

The distribution of sample population by marital status is presented in Table 10. It can be observed that about 49 per cent of females are currently married. In the age group 15-44 years, about

Table 10: Distribution of Population by Marital Status

| Age groups | Single | | | Married | | | Widowed/ Widowers | | | Divorced/ Separated | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T |
| ∠ 15 | 100.0 | 99.8 | 99.9 | - | 0.2 | 0.1 | - | - | - | - | - | - | 100.0 (470) | 100.0 (512) | 100.0 (982) |
| 15-24 | 76.6 | 15.1 | 33.3 | 23.4 | 83.7 | 65.9 | - | 0.6 | 0.4 | - | 0.6 | 0.4 | 100.0 (141) | 100.0 (337) | 100.0 (478) |
| 25-34 | 5.4 | 2.9 | 4.5 | 94.0 | 94.8 | 94.3 | 0.6 | 1.2 | 0.8 | - | 1.2 | 0.4 | 100.0 (334) | 100.0 (172) | 100.0 (506) |
| 35-44 | 1.9 | - | 1.4 | 97.1 | 90.0 | 95.2 | - | 10.0 | 2.8 | 1.0 | - | 0.7 | 100.0 (105) | 100.0 (40) | 100.0 (145) |
| 45+ | 0.6 | 0.5 | 0.5 | 88.6 | 62.6 | 74.6 | 9.7 | 31.0 | 21.2 | 1.1 | 5.9 | 3.7 | 100.0 (175) | 100.0 (203) | 100.0 (378) |
| Total | 48.9 (599) | 44.9 (568) | 46.9 (1167) | 49.3 (604) | 48.2 (609) | 48.7 (1213) | 1.6 (19) | 5.6 (71) | 3.6 (90) | 0.2 (3) | 1.3 (16) | 0.8 (19) | 100.0 (1225) | 100.0 (1264) | 100.0 (2489) |

94 per cent of the females are currently married. The corresponding figure for males is about 77 per cent. The proportion of widows is about 6 per cent and it is higher than the proportion of widowers which is about two per cent. Similary the proportion of divorced/separated is higher among the females as compared to males although the proportion is not very significant.

Table 11: Distribution of Population by Religion and Caste

| Religion/ Castes | Percentage of Popualtion |
|---|---|
| S.C. | 24.1 |
| S.T. | 5.1 |
| Other Hindus | 67.5 |
| Muslims | 1.8 |
| Christians | 1.5 |
| Total | 100.0 (2489) |

The distribution of sample population (Table 11) shows that about 96 per cent of the population are Hindus including SC/ST and about 2 per cent each are Muslims and Christians. The Scheduled Castes population constitutes about 24 per cent of the total population. About 5 per cent of the total population are

schedule tribes. Thus, other Hindus constitutes about 68 per cent of the total population.

The distribution of population by level of literacy for males and females is presented in Table 12. The general literacy rate as calculated reveals that 37 per cent of the population aged 7 years and above are literate. The literacy rate for males is about 42 per cent and is higher than the female literacy rate of 33 per cent. The proportion of literates declines with the increasing level of education. For example, the literates with the level of primary schooling is about 16 per cent declines to about 9 per cent when the level of literacy is measured for middle school level. When it comes to PUC and above, the percentage is reduced to about 3. In each level the proportion of literate males is higher than females.

Table 12: Distribution of Population (7 years and above) by Level of Education

| Level of Education | Males | Females | Total |
|---|---|---|---|
| Illiterate | 58.3 | 67.1 | 62.8 (1070) |
| Literate: | | | |
| i) with primary school | 17.5 | 24.7 | 16.1 (274) |
| ii) Middle school | 9.6 | 9.2 | 9.4 (160) |
| iii) High School(SSLC) | 10.4 | 7.1 | 8.7 (149) |
| iv) PUC and above(including Diploma etc.) | 4.2 | 1.9 | 3.0 (52) |
| Total | 100.0 (836) | 100.0 (869) | 100.0 (1705) |

## MATERNITY SITUATION OF THE STUDY AREA

In the earlier section, the general situation of the area and its population, their socio-economic conditions are examined. Since existing maternal situation has bearing with maternal mortality, it is useful to examine the maternal situation in the study area. As per design of the study, 20 per cent of the women who delivered a live births during the reference period and those women died due to maternal causes of death are included for detailed investigation. A structured schedule was administered for collecting

such information.

A total of 407 currently married women in the age group 15-44 years were selected for examining the existing maternal situations.

Table 13: Percentage Distribution of Currently Married Women Who Delivered a Live birth During the Reference Period

| Age | Proportion of Women |
|---|---|
| 15-19 | 14.0 |
| 20-24 | 51.1 |
| 25-29 | 26.5 |
| 30-34 | 5.7 |
| 35-39 | 2.7 |
| 40-44 | - |
| Total | 100.0 (N=407) |

**AGE**

It can be observed from Table 13 that about 51 per cent of the women who delivered a live birth during reference period are in the age group 20-24 years. This is followed by the women in the subsequent age group 25-29 and preceding age group 15-19 years. The proportion of women who delivered a live birth during reference period is about 27 per cent in the age group 25-29 years and 14 per cent in the age

group 15-19 years. However, the proportion of women who delivered a live birth in the subsequent age groups is considerbly lower as it is only about 6 per cent in the age group 30-34 and about 3 per cent in the age group 35-39. In the last age group of the reproductive span (40-44), no woman delivered a live birth during the reference period. It is of course clear that the level of fertility is declining and concentration of women who delivered live births is by and large restricted in the age group 15-29 years. The average age at marriage for these women is 14.6 years and the age at first pregnancy is 17.1 years. Thus, the gap between the age at marriage and first pregnancy is 2.5 years. Because of low age at marriage for females and early childbearing, the maternal risk is relatively high.

Table 14 Percentage Distribution of Currently Married Women Who Delivered a Live birth During Reference Period by Age and Para

| Age | Para | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5+ | Total |
| 15-19 | 10.6 | 3.2 | 0.2 | - | - | 14.0 (N=57) |
| 20-24 | 12.5 | 11.3 | 4.2 | 4.2 | 0.5 | 51.1 (N=208) |
| 25-29 | 2.0 | 7.1 | 8.4 | 6.1 | 2.9 | 26.5 (N=108) |
| 30-34 | 0.5 | 0.5 | 1.2 | 2.3 | 1.2 | 5.7 (N=23) |
| 35-39 | 0.2 | 0.5 | 0.2 | 0.5 | 1.2 | 2.6 (N=11) |
| 40-44 | - | - | - | - | - | - |
| Total | 25.8 (N=105) | 33.9 (N=138) | 21.3 (N=87) | 13.1 (N=53) | 5.8 (N=24) | 100.0 (N=407) |

The next important aspect is para of the women. It is a known fact that maternal risk is higher at para one and two and also in the higher para four and above. If the para 1 and 2 is associated with lower age of the mother and para four and above is associated higher age, there is possibility of further increase of maternal risk. It can be observed from Table 14 that about 26 per cent of the currenly married women are in the para 1 and about 34 per cent of them are in para two. This is followed by the women in para 3 (about 21 per cent), and the proportions of women in higher para

is only about 19 per cent. If this is correspondingly compared with the age of the mother then it can be observed that the proportion of women in higher para with higher age is very small and thus maternal risk in that category is low. However, the quantum of women with maternal risk is relatively high in para 1 and 2 with age less than 20 years. It can be observed that about 20 per cent of total women in the study area are with high risk of maternal mortality.

Table 15: Pregnancy History of the women Who Delivered a Live birth During the Reference Period

| No. of women | Total No.of pregnancy experienced | Termination of pregnancy | | | Average live birth per women | Pregnancy wastage per women |
|---|---|---|---|---|---|---|
| | | Live birth | Still-birth | Abortion | | |
| 407 | 1016 | 955 | 45 | 16 | 2.34 | 0.15 |

The pregnancy history of the women who delivered a live birth during the reference period is presented in Table 15. It can be observed that on an average each woman experienced about 2.5 terminated preganancies out of which 2.34 were terminated with live births and 0.15 were accounted for stillbirths and abortions.

Therefore, the pregnancy wastage is not very significant. The average termination of pregnancies if compared with the para of the women, it can be observed prevalance of higher order birth in the higher age group of the women is low. This is probably due to the higher acceptance of permanent family planning methods (as observed by the survey staff).

It is also important to examine the extent of deliveries at home and at the institution. It can be obseved from Table 16 that about 80 per cent of the deliveries took place at home and they were largely attended by relatives/friends. It is observed from Table 17 that about 59 per cent of the total home deliveries were attended by relatives/friends, about 13 per cent were attended by trained dais, about 16 per cent were attended by ANM/LHV and about 9 per cent were are attended by untrained dais. It is only about 3 per cent of the home deliveries are attended by doctor.

Therefore, about 68 per cent of the home deliveries attended by untrained dais relatives and friends are remained at higher maternal risk in the study area.

Table 16: Distribution of Deliveries by Place of Delivery

| Place of Delivery | Percentage |
|---|---|
| Home | 79.9 |
| Institution | 20.1 |
| Total | 100.0 (N = 1012) |

Table 17: Distribution of Home Deliveries by Type of Attendents

| Type of Attendent | Percentage |
|---|---|
| Relatives/Friends | 58.8 |
| Trained Dai | 12.7 |
| ANM/LHV | 16.2 |
| Doctors(Private and Govt.) | 2.5 |
| Untrained Dai | 9.4 |
| Attended by None | 0.4 |
| Total | 100.0 (N= 809) |

## MATERNAL MORTALITY

It was possible to identify 30 deaths among the women in the age group 15-44 years in the area covered during the reference period. These deaths were matched with causes of death and after matching the

matched with causes of death and after matching the number of maternal deaths were found to be 8. This showed that about 27 per cent of female deaths in the age group 15-44 were maternal deaths.

The births that occurred in the reference period were adjusted with population and area. These births were used for estimating the crude birth rate and maternal mortality ratio. The estimated maternal mortality ratio per 100,000 live births was 403. The crude birth rate and crude death rate were estimated as about 20 and 5.4 respectively (Table 18).

Table 18: Crude Death Rate, Crude Birth Rate, Maternal Mortality Ratio

| | |
|---|---|
| CDR | 5.4 |
| CBR | 20.0 |
| Maternal Mortality Ratio | 403.0 |

Maternal mortality is known to be associated with different socio-economic, demographic and biological factors. Since these factors are interlinked, the contribution of each such factor is difficult to measure. However, the role of these factors are reflected in different stages of pre-natal and post natal periods. An attempt is made to examine the association

## AGE OF MOTHERS

It is already known that motherhood at an early age <20 years is associated with higher risk of maternal mortality. It can be obseved from Table 19 that 50 per cent of the maternal deaths are in the age group 15-19 years. Another 25.0 per cent are in the age group 20-24 and 12.5 per cent each are in the subsequent age groups 25-29 and 30-34 years.

Table 19: Distribution of Maternal Deaths by Age

| Age | Percentage |
|---|---|
| <15 | - |
| 15-19 | 50,0 |
| 20-24 | 25.0 |
| 25-29 | 12.5 |
| 30-34 | 12.5 |
| 35-39 | - |
| 40-44 | - |
| Total | 100.0 (8) |

PARITY

The parity of women is also considered as other important factor because of two reasons.One reason is the age of the mother and other is cultural norm prevailing in the society for begetting a child as early as possible after the marriage. The combination factors makes the situation more conducive for higher risk of maternal mortality. If the incidence of mater nal deaths is examined by para of the women it can be observed (Table 20) that 25 per cent of the maternal deaths are in first para and 37.5 are in 2nd and another 37.5 are in 3rd para. About 50 per cent of the maternal deaths among the mothers aged less than 20 years are coupled with 1st and 2nd para.

Table 20: Distribution of Maternal Deaths by Para

| Para | Percentage |
|---|---|
| 1st | 25.0 |
| 2nd | 37.5 |
| 3rd | 37.5 |
| 4th and above | -- |
| | 100.0 |

It is thus confirmed that lower age at the mother hood with first and second para associated with higher incidence of maternal deaths. The average age at

marriage and average age at first pregnancy among the women who died due to the maternal causes are 15.5 years and 17.5 years respectively.

Table 21: Maternal Mortality Ratio by Age (per 1000 live births)

| Age of Mother | Ratio |
|---|---|
| 15-19 | 14.0 |
| 20-24 | 2.0 |
| 25-29 | 2.0 |
| 30-34 | 8.7 |
| 35+ | -- |

The maternal mortality ratio, by age of the mother are presented in Table 21. It can be observed that the age of the mother is very important factor in the occurence of maternal deaths. The maternal mortality ratio is found to be higher among the women in the age group 15-19 and 30-34 years. In otherwords, mothers of younger age who are at the beginning of reproductive span and older women in the later period of the repro ductive span are at higher risk of maternal mortality. The genral pattern of the maternal mortality ratios follows a U-shaped curve.

INCOME

Apart from age and parity, the maternal mortality is dependent on other socio-economic factors like income, literacy and cultural factor like dietary habits during pregnancy, ante-natal care, birth interval, place of delivery etc. Therefore, it may be useful to examine these factors and their association with maternal deaths.

Table 22: Distribution of Maternal Deaths by Annual Household Income

| Income (in Rupees) | Percentage |
|---|---|
| Upto Rs.10,000 | 25.0 |
| Rs.10,001-20,000 | 62.5 |
| Rs.20,001-30,000 | 12.5 |
| Rs.30,001 and above | Nil |
| Total | 100.0 |

It can be observed that by and large there is an increase relationship between income and maternal deaths. As noticed in the household income distribution earlier that most of the households belong to the middle level income group. The incidence of maternal deaths is

found to be highest in the households who have the annual income in the range of Rs.10001 and 20000 and lowest among the households with annual income Rs.20001 to 30000. There is no maternal deaths among the households with annual income more than Rs.30001 (Table 22).

LITERACY

Similarly, the level of literacy has also bearing with maternal deaths in the sense that incidence of maternal deaths is higher where the heads of the household are illiterate(Table 23). It is about 63 per cent. The incidence of maternal mortality declined sharply with the increasing level of education among the heads of the households. The percentage of maternal deaths is found to be about 37 per cent among the

Table 23: Distribution of Maternal Deaths by Education Level of Head of the Household.

| Education Level | Percentage |
|---|---|
| Illiterate | 62.5 |
| Literate upto SSLC level | 37.5 |
| Literate with PUC & above | nil |
| Total | 100.0 |

households where the education of the heads of the household is upto SSLC level. It is interesting to observe that incidence of maternal deaths is found to be nil among the households where the heads of households with PUC and above. The reasons may be the fact that the literate heads of the households are likely to take both preventive and curative measures to ensure the health of the pregnant and nursing mothers.

## BIRTH INTERVAL

It is generally experienced that repeated pregnancy in short interval of time is one cause of maternal mortality. It can be observed from Table 24 that about 50 per cent of maternal deaths are accounted among the women when length of birth interval is less than 12 months. About 25 per cent of maternal deaths have taken place between marriage and first birth and about 13 per cent each where the length of birth interval is between 12 and 24 months or 25 and 36 months. However, there is no maternal death among the women having a birth interval length more than 36 months.

Table 24:Distribution of Maternal Deaths According to Birth Interval

| Birth Interval | Percentage |
|---|---|
| Marriage and 1st birth | 25.0 |
| Less than 12 months | 50.0 |
| Between 12 months and 24 months | 12.5 |
| Between 25 months and 36 months | 12.5 |
| 36 months and above | Nil |
| Total | 100.0 |

DIET DURING PREGNANCY

It is a known fact that chance of survival of the mother from pregnancy related causes increases substantially if the mother takes adequate nourishment during pregnancy. The mechanism is such that in the normal condition, the foetus in the womb takes its required quantity of nourishment irrespective of mother health conditions. Therefore, it is important that mother during pregnancy should be careful to take extra nourishment by increasing the quantum of food. In order to measure the quantum of food intake during pregnancy, the food intake is grouped into three different categories viz., "Below normal", "Normal" and "Above Normal" It may be difficult to measure the diet

intake of dead person as the household members may not admit that the woman is given inadequate diet. Moreover, a misconception about the diet prevails in the sense that more food to the woman during pregnancy makes the child in the womb bigger in size and thus risk the mothers life. The measure of diet is only a rough estimates and does not have any scientific basis. The measure is based on the intake like quantity of cereals, pulses, vegetables, milk, egg, fish and fruits as revealed by respondent. The distribution of maternal deaths according to diet taken is presented in Table 25. It can be observed that no body had taken any dietary level above the normal quantum during pregnancy. However, about 38 per cent of the women were in the category of normal diet and about 63 per cent were in the category of "Below normal".

Table 25: Distribution of Maternal Death According to Diet Taken During Pregnancy

| Diet | Percentage |
|---|---|
| Below Normal | 62.5 |
| Normal | 37.5 |
| Above Normal | Nil |
| Total | 100.0 |

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## MATERNTAL AND CHILD HEALTH SERVICES

One of the measures for reducing maternal mortality is to provide adequate ante-natal and post-natal services to the pregnant and nursing mothers. It is already noticed that the antenatal regisration as well as the distribution of iron and folic acid tablets, providing TT doses to the pregnant women is not complete in the study area. However, it can be observed that all the maternal mortality case were registered for ANC services and all of them were in receipt of TT during pregnancy. The iron and folic acid tablets were recieved by about 63 per cent and average contact made by the health workers for each woman was 5 t imes

Table 26: Distribution of Maternal Deaths by Different Services Provided

| | | |
|---|---|---|
| ANC Registered | | 100.0 |
| Received TT | | 100.0 |
| Received Iron & Folic Acid Tablets | | 62.5 |
| Place of Delivery | a) Home | 25.0 |
| | b) Institution | 75.0 |
| Place of Death | a) Home | 37.5 |
| | b) Hospital | 62.5 |
| Average contact made by Para Medical Staff | | 5 |

during the period of gestation and upto time of death/till the time admitted to the hospital. As noted earlier that majority of deliveries take place at home and are attended by untrained dais/friends/relatives. In contrast to this, it is important to note that most of the deliveries of maternal deaths are taken place in the hospital. The reasons may be the complications anticipated at birth and thus admitted to the hospital.

Table 27: Distribution of Maternal Deaths by Time of Death

| Time of Death | Percentage |
|---|---|
| During pregnancy (ANC) | 12.5 |
| During delivery | 12.5 |
| Within 7 days after delivery | 50.0 |
| Between 8 and 21 days after delivery | 25.0 |
| Between 22 and 42 days after delivery | NIL |
| Total | 100.0 |

The distribution of maternal deaths by time of death is presented in Table 27. It can be noticed that within first seven days after delivery, the concentration of maternal deaths was more and accounted for 50 per cent of the total deaths. There were 12.5 maternal

deaths in ANC period and another 12.5 per cent was deaths in ANC period and another 12.5 per cent was during delivery and rest 25 per cent was in the period between 8 and 21 days after delivery.

It is also important to know whether timely and adeuquate medical care was provided to deceased before her death. It can be observed that sufficient medcal care was provided to about 75 per cent cases. However, about 25 per cent of the cases adequate medical care was not provided.

Table 28: Distribution of Maternal Deaths by Place of Death and Medical Care Provided

| Death at | Sufficient Medical Care provided | No Medical Care provided |
|---|---|---|
| Home | 25.0 | 12.5 |
| Hospital | 50.0 | 12.5 |

CAUSES OF MATERNAL DEATHS

It may be difficult to obtain reliable information on causes of death for maternal mortality. Therefore, caution was taken to find out cause of death by matching the symptom of suffering before death. It was thus

possible to get an idea about the symptoms of about 75 per cent of the total maternal death. Since the data were collected retrospectively, it depends on the information provided by the family members. The symptoms like fever, pain, fits, cramps, etc. were understood by the family members and reported when asked for. By and large it was possible to identify causes of maternal deaths for about 87 per cent of the total maternal deaths. It can be observed from Table 30 that the major causes of death were eclampsia (25 per cent), sepsis (25 per cent) haemorrhage before and after delivery (25 per cent) and unexpelled placenta (12.5 per cent). The remaining 12.5 per cent of the maternal deaths for which the specific causes could not be identified were classified under "Others".

Table 29: Distribution of Maternal Deaths by Symptoms Before Deaths

| Symptoms | Percentage |
|---|---|
| Fits | 25.0 |
| Fever/pain | 12.5 |
| Cramps | 12.5 |
| Offensive Odour | 25.0 |
| Others (mixed symptoms not clearly identified) | 25.0 |
| Total | 100.0 |

Table 30: Distribution of Maternal Deaths by Causes of Death

| Cause of Death | Percentage |
|---|---|
| Haemorrhage before delivery | 12.5 |
| Haemorrhage after delivery | 12.5 |
| Eclampsia | 25.0 |
| Sepsis | 25.0 |
| Unexpelled Placenta | 12.5 |
| Others (Not clearly identified) | 12.5 |
| Total | 100.0 |

## CONCLUSIONS

The study was carried out in the rural areas of Mysore district where the prevailing maternal situation is not very satisfactory. The study area is associated with low level of female literacy, middle level of household income, low age at marriage for female coupled with early motherhood. The place of delivery is still mostly at home, and ANC services are not adequate as all the pregnant women are not registered for ANC and even those are registered all of them do not utilize the facilities because of various reasons. It is observed that 75 per cent of deseased women were aged

between 15 and 24 years and were in first and second para of their fertility. However, an important observation is made that higher order births were some extent prevented by the acceptance of family planning methods and inturn the overall birth rate was found low. This may be the reasons for relatively lower maternal mortality ratio. The estimated maternal mortality ratio is about 400 per 100,000 live births. The maternal deaths were more at post natal period. The causes of maternal deaths were mainly haemorrhage, sepsis, eclampsia and unexpelled placenta. These deaths are largely preventable and can be achieved by providing better post-natal care and improving socio-economic conditions.

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# APPENDIX

GOVERNMENT OF KARNATAKA

POPULATION CENTRE
BANGALORE

# STUDY OF MATERNAL MORTALITY

## I. Village Schedule

(Respondent: Any responsible person of the village, eg., panchayat member, teacher, etc.,)

Serial No. [1][2][3]

**Identification**

1.0 Name of the district [4]

Mysore - 1 Chitradurga - 2

1.1 Name of PHC: _____ [5][6]

1.2 Name of the Sub-centre: _____ [7]

1.3 Name of the Village: _____ [8][9][10]

**Infrastructure Facilities**

2.0 Distance from the nearest taluk headquarters (in kilometers) [11][12]

2.1 Distance from the nearest town (in Kms.) [13][14]

2.2 Distance from the nearest bus station (in Kms.) [15][16]

2.3 Distance from the nearest railway station (in Kms.) [17][18]

2.4 Distance from the nearest pucca road (in Kms.) (If the village is connected by pucca road, then record "00") [19][20]

2.5 Main source of drinking water in the village [21]

| | | | |
|---|---|---|---|
| Tap water | - 1 | Open well | - 5 |
| Tube well/Bore well | - 2 | River | - 6 |
| Spring | - 3 | Canal | - 7 |
| Pond | - 4 | Lake | - 8 |
| | | Others | - 9 |

2.6 Is the village electrified? Yes - 1 No - 2 [22]

2.7 Are the houses in the village electrified? [23]

Yes - 1 No - 2

2.8 Type of drainage facility in the village? [24]

Underground drainage - 1
Open drainage - 2
No drainage - 3

2.9 Lavatory in houses? Yes - 1 No - 2 [25]

2.10 Community lavatory? Yes - 1 No - 2 [26]

2.11 Educational facilities
(If the facility is available in the village record "0" for distance otherwise record the distance in Kms. in two digits)

| | |
|---|---|
| Primary school | 27 28 |
| Middle school | 29 30 |
| High school | 31 32 |
| High secondary school | 33 34 |
| College | 35 36 |
| Adult education classes | 37 38 |

2.12 Health facilities
(If the facility is available in the village, record "0" for distance otherwise record the distance in Kms. in two digits)

| | |
|---|---|
| Sub-centre | 39 40 |
| P.H.U. | 41 42 |
| P.H.C. | 43 44 |
| Government hospital | 45 46 |
| Private hospital | 47 48 |
| Private clinic/Nursing home | 49 50 |
| Village health guide | 51 52 |
| Trained birth attendant | 53 54 |
| Visit of mobile health unit | 55 56 |

2.13 Number of private medical practitioners in the village

| | |
|---|---|
| Allopathy | 57 |
| Homeopathy | 58 |
| Ayurveda | 59 |
| Unani | 60 |
| Siddha | 61 |
| Others | 62 |

2.14 Other facilities available in the village?

| | Yes | No | |
|---|---|---|---|
| Post office | 1 | 2 | 63 |
| Cinema | 1 | 2 | 64 |
| Daily news paper | 1 | 2 | 65 |
| Pharmacy/Medical shop | 1 | 2 | 66 |
| Community radio | 1 | 2 | 67 |
| Community TV | 1 | 2 | 68 |

2.15 Mass Media/Other educational activities for health and family welfare carried out during last one year?

| | Held | Not held | |
|---|---|---|---|
| Film shows | 1 | 2 | 69 |
| Exhibitions | 1 | 2 | 70 |
| Drama/Song performances | 1 | 2 | 71 |
| Group meetings | 1 | 2 | 72 |
| .....O.T.C..... | 1 | 2 | 73 |

2.16 Have any posters relating to family welfare/health been displayed during the last one year?

Yes - 1 No - 2

Signature of the R.A.: _____

Name: _____

Date: _____

Village Schedule 75/1

GOVERNMENT OF KARNATAKA

POPULATION CENTRE
BANGALORE

STUDY OF MATERNAL MORTALITY

II. Household Schedule

(Respondent: Head of the household or any adult responsible member of the household)

Serial No. [1] [2] [3]

1. Identification

1.0 Name of the district [4]

Mysore - 1 Chitradurga - 2

1.1 Name of the PHC: _____ [5] [6]

1.2 Name of the Sub-centre: _____ [7]

1.3 Name of the village: _____ [8] [9] [10]

1.4 Name of the head of the household: _____

1.5 Name of the respondent: _____

2. Household Identification

2.0 Which religion do you belong to? [11]

Hindu - 1 Jain - 4
Christian - 2 Others - 5
Muslim - 3

2.1 Which caste do you belong to: [12]

S.C. - 1 Vokkaliga - 5
S.T. - 2 Other hindu - 6
Brahmin - 3 Not applicable - 8
Lingayat - 4

2.2 Total annual income (Rs. in "00") of the household from all sources (Record in three digits considering income from both cash and kind) Can't say - 998 [13] [14] [15]

2.3 Total annual expenditure of the household (Record in three digits) Can't say - 998 [16] [17] [18]

2.4 Type of house [19]

Hut - 1 Brick, stone or cement house - 4
Mud house with thatched roof - 2 Others _____ - 5
Mud house with tiled roof - 3 specify

3. Household Record Form

Now I would like to have some information about the people who usually live in your household

| No. | Please give the names of the person who usually live in your household, starting with the head of household | Relationship to the head of the HH* | Age** | Sex*** | Marital status+ | Educational level++ | Occupation a/ |
|---|---|---|---|---|---|---|---|
| 3.0 | 3.1 | 3.2 | 3.3 | 3.4 | 3.5 | 3.6 | 3.7 |
| 20 21 | | 22 23 | 24 25 | 26 | 27 | 28 29 | 30 31 |
| 32 33 | | 34 35 | 36 37 | 38 | 39 | 40 41 | 42 43 |
| 44 45 | | 46 47 | 48 49 | 50 | 51 | 52 53 | 54 55 |
| 56 57 | | 58 59 | 60 61 | 62 | 63 | 64 65 | 66 67 |
| 68 69 | | 70 71 | 72 73 | 74 | 75 | 76 77 | 78 79 |
| 80 81 | | 82 83 | 84 85 | 86 | 87 | 88 89 | 90 91 |
| 92 93 | | 94 95 | 96 97 | 98 | 99 | 100 101 | 102 103 |
| 104 105 | | 106 107 | 108 109 | 110 | 111 | 112 113 | 114 115 |
| 116 117 | | 118 119 | 120 121 | 122 | 123 | 124 125 | 126 127 |
| 128 129 | | 130 131 | 132 133 | 134 | 135 | 136 137 | 138 139 |
| 140 141 | | 142 143 | 144 145 | 146 | 147 | 148 149 | 150 151 |
| 152 153 | | 154 155 | 156 157 | 158 | 159 | 160 161 | 162 163 |
| 164 165 | | 166 167 | 167 169 | 170 | 171 | 172 173 | 174 175 |
| 176 177 | | 178 179 | 180 181 | 182 | 183 | 184 185 | 186 187 |

* Codes for relationship to the head of the household (Q.3.2)

01 - Head
02 - Wife or husband
03 - Son or daughter
04 - Son-in-law or daughter-in-law
05 - Grand child
06 - Parent
07 - Parent-in-law
08 - Brother or sister
09 - Brother-in-law or sister-in-law
10 - Other relatives
11 - Adopted/Foster child
12 - Not related

** Codes for Age (Q.3.3)

Record completed age in two digits. If less than one year record "00"

*** Codes for Sex (Q.3.4)

Male - 1
Female - 2

\+ Codes for Marital Status (Q.3.5)

1 - Never married
2 - Currently married
3 - Separated
4 - Widowed
5 - Divorced

++ Codes for Education level (Q.3.6)

01 - Illiterate
02 - Primary school (1-4 standard)
03 - Middle school (5-7 standard)
04 - High school
05 - P.U.C.
06 - Bachelor's degree
07 - Mater's degree
08 - Technical degree
09 - Ph.D.
10 - Technical diploma
11 - Non-Technical deiploma
12 - Others
-
97 - Not applicable (below 7 years)
98 - Can't say
99 - No response

a/ Codes for Occupation (Q.3.7)

01 - Cultivators
02 - Agricultural labourers
03 - Casual labourers
04 - Household workers
05 - Business
06 - Clerical
07 - Professional
08 - Others (specify)
09 - Non-workers
-
98 - Not applicable (below 5 years)
99 - No response

4.0 From whom do you take treatment when you or your family member fall sick?

| Treatment from | Take treatment | Do not take treatment | Can't say | |
|---|---|---|---|---|
| a) Self treatment | 1 | 2 | 8 | 188 |
| b) Home remedies | 1 | 2 | 8 | 189 |
| c) Mantravadi | 1 | 2 | 8 | 190 |
| d) Homeopath (Government) | 1 | 2 | 8 | 191 |
| e) Homeopath(Private) | 1 | 2 | 8 | 192 |
| f) Allpath (Government) | 1 | 2 | 8 | 193 |
| g) Allopath (Private) | 1 | 2 | 8 | 194 |
| h) Ayurvedic doctor (Government) | 1 | 2 | 8 | 195 |
| i) Ayurvedic doctor (Private) | 1 | 2 | 8 | 196 |
| j) Unani | 1 | 2 | 8 | 197 |
| k) Others | 1 | 2 | 8 | 198 |

4.1 What is the type of service unit/hospital/dispensary near your house/village which you use mostly? 199 200

Sub-centre – 01
P.H.C. – 03
Pvt. hospital – 05
Pvt. clinic – 07
Charitable institution – 09
P.H.U. – 02
Dispensary – 04
Govt. hospital – 06
Nursing home – 08
Others _____ – 10
specify

4.2 Distance from your house/village to the service unit/ hospital/dispensary which you use mostly? 201 202
Record the actual distance in Kms. in two digits

4.3 What types of services are provided there?

| Services | Provided | Not provided | Can't say | |
|---|---|---|---|---|
| Treatment for minor ailments | 1 | 2 | 8 | 203 |
| Pregnancy check up | 1 | 2 | 8 | 204 |
| Delivery | 1 | 2 | 8 | 205 |
| Family planning | 1 | 2 | 8 | 206 |
| Immunization or health check up of children | 1 | 2 | 8 | 207 |
| Others (specify) | 1 | 2 | 8 | 208 |

4.4 Did you/your family members face any problems while availing services at the government health institutions? 209

4.5 If yes, what are the problems?
(Note:- Spontaneious response only)

| Problems | Yes | No | |
|---|---|---|---|
| It is very far | 1 | 2 | 210 |
| Staff are not available | 1 | 2 | 211 |
| Staff/doctors are discourteous | 1 | 2 | 212 |
| Medicine is not available | 1 | 2 | 213 |
| Have to wait for a long time | 1 | 2 | 214 |
| Staff/doctors demand money | 1 | 2 | 215 |
| No relief | 1 | 2 | 216 |
| Others (specify) | 1 | 2 | 217 |

4.6 Did any male health worker visited your house in the last one year? 218

GOVERNMENT OF KARNATAKA

POPULATION CENTRE
BANGALORE

STUDY OF MATERNAL MORTALITY

## III. Maternity Schedule

### Part - A

(Respondent: i) Woman who has given birth to a child in the reference period
ii) In case of maternal death (in the reference period), any adult female member of the household)

Serial No. 1 2 3

1.0 Name of the women: _____

1.1 Name of the husband: _____

1.2 Living status of the woman 4

Alive - 1 Dead - 2

1.3 If alive, what is her current age? Record in completed years in 2 digits (compare and correct age with HRF if inconsistent) 5 6

1.4 If dead, what was her age at death in completed years in two digits 7 8

1.5 Age of husband record in completed years in two digits 9 10

1.6 Age at first marriage, Record the actual age (in completed years) in two digits 11 12

1.7 Age at first pregnancy, Record the actual age (in completed years) in two digits 13 14

1.8 Total number of pregnancies the woman experienced 15

1.9 Outcome of the pregnancies
(Record the actual number. If none, record "0")

Live births 16

Multiple births 17

Still births 18

Spontaneous abortions 19

Induced abortions 20

1.10 Number of complicated pregnancies.
Record the actual number. If none, record "0" 21

1.11 Number of complicated deliveries.
Record the actual number. If none, record "0" 22

1.12 Number of caesarean/operations deliveries.
Record the actual number. If none, record "0" 23

2. Pregnancy history (starting from the last pregnancy)

| Pregnancy order | Outcome of pregnancy [a] | Age at birth/ loss | Month of women's pregnancy when birth or loss occurred | Sex of child if born alive [b] | Preceding pregnancy interval | Type of birth [c] | Place of pregnancy termination [d] | If home who attended the delivery (termination of pregnancy) [e] | Any problem during pregnancy or delivery [f] |
|---|---|---|---|---|---|---|---|---|---|
| 2.0 | 2.1 | 2.2 | 2.3 | 2.4 | 2.5 | 2.6 | 2.7 | 2.8 | 2.9 |
| 24 | 25 | 26 27 | 28 | 29 | 30 31 | 32 | 33 | 34 35 | 36 |
| 37 | 38 | 39 40 | 41 | 42 | 43 44 | 45 | 46 | 47 48 | 49 |
| 50 | 51 | 52 53 | 54 | 55 | 56 57 | 58 | 59 | 60 61 | 62 |
| 63 | 64 | 65 66 | 67 | 68 | 69 70 | 71 | 72 | 73 74 | 75 |
| 76 | 77 | 78 79 | 80 | 81 | 82 83 | 84 | 85 | 86 87 | 88 |
| 89 | 90 | 91 92 | 93 | 94 | 95 96 | 97 | 98 | 99 100 | 101 |
| 102 | 103 | 104 105 | 106 | 107 | 108 109 | 110 | 111 | 112 113 | 114 |
| 115 | 116 | 117 118 | 119 | 120 | 121 122 | 123 | 124 | 125 126 | 127 |

a/ Codes for Q.2.1
Live birth – 1
Still birth – 2
Multiple birth – 3
Spontaneous abortion – 4
Induced abortion – 5

b/ Codes for Q.2.4
Male – 1
Female – 2

c/ Codes for Q.2.6
Single – 1
Twin – 2
Triplet – 3
N.A. – 8

d/ Codes for Q.2.7
Home – 1
Institution – 2

e/ Codes for Q.2.8
Mother or mother-in-law – 01
Relatives – 02
Friends – 03
Untrained dai – 04
Trained dai – 05
JHA(F) (ANM) – 06
SHA(F) (LHV) – 07
Govt. doctor – 08
Pvt. doctor – 09
No one – 10
Others – 11
N.A. – 98

f/ Codes for Q.2.9
Yes – 1
No – 2

Just to make sure I have this correct you have had in total, ____pregnancies during your life. Is that correct Yes/No
If "No" PROBE and correct questions 1.8 & 1.9.

3. Ante-natal care received during the last pregnancy

3.0 Was the pregnancy registered? 128

Yes - 1 No - 2

3.1 If yes, month of gestation when registered 129 130

N.A. - 98

3.2 If no, reasons for not registering (not going for ante-natal check-up) 131 132

| | | | |
|---|---|---|---|
| Lack of knowledge of services | - 01 | No time to go | - 08 |
| Not necessary | - 02 | Not permitted to go | - 09 |
| Not customary | - 03 | Others | - 10 |
| Involves cost | - 04 | Can't say | - 11 |
| Inconvenient | - 05 | Not applicable | - 98 |
| Poor quality of service | - 06 | | |
| Health staff didn't visit | - 07 | | |

3.3 Where was it registered 133

| | | | |
|---|---|---|---|
| Home (by health staff) | - 1 | Private dispensary/ hospital | - 5 |
| Sub-centre | - 2 | Others | - 6 |
| PHC/PHU | - 3 | Can't say | - 7 |
| Government dispensary/ hospital | - 4 | N.A. | - 8 |

3.4 Frequency of visit to place of registration (Other than the home) 134

| | | | |
|---|---|---|---|
| Weekly | - 1 | Whenever there was a problem | - 5 |
| Fortnightly | - 2 | Can't say | - 6 |
| Monthly | - 3 | N.A. | - 8 |
| Off and on | - 4 | | |

3.5 Did any JHA(F) visit you during pregnancy? 135

Yes - 1 No - 2

3.6 How many times did she visit you? 136 137
(Record the actual number in two digits)

Can't say - 97 N.A. - 98

3.7 How frequently did she visit you? 137

| | | | |
|---|---|---|---|
| Weekly | - 1 | Whenever there was a problem | - 5 |
| Fortnightly | - 2 | Others | - 6 |
| Monthly | - 3 | Can't say | - 7 |
| Off and on | - 4 | N.A. | - 8 |

3.8 How many contacts did you have with the following health personnel (other than JHA(F) for ante-natal care?

| | | |
|---|---|---|
| Trained dai | N.A. - 8 | 139 |
| Health guide | N.A. - 8 | 140 |
| SHA (F) | N.A. - 8 | 141 |
| Government doctor | N.A. - 8 | 142 |
| Private doctor | N.A. - 8 | 143 |
| Others (specify) | N.A. - 8 | 144 |

3.9 Did you receive T.T. (Tetanus Toxoid) vaccination? 145

Yes - 1 No - 2

3.10 No. of doses received (Record the actual doses) 146

B.D. - 4 Can't say - 7 N.A. - 8

3.11 Reason for not having vaccination 146

| | | | |
|---|---|---|---|
| Health worker didn't visit | - 01 | No belief/faith | - 08 |
| Out of place | - 02 | Busy with household work | - 09 |
| Didn't know about it | - 03 | Afraid of vaccination | - 10 |
| Felt healthy and vaccination was not needed | - 04 | Afraid it affects the child's health | - 11 |
| Nobody visited | - 05 | Others(specify) | - 12 |
| Mother-in-law against | - 06 | Can't say | - 97 |
| Husband against | - 07 | N.A. | - 98 |

3.12 Did you receive iron and folic acid tablets? 147

Yes - 1 No - 2

3.13 How many tablets did you receive? (Record the actual number of tablets in three digits) 148 [ ] [ ] [ ]

Can't say - 977 N.A. - 988

3.14 Reasons for not receiving iron and folic acid tablets 149 [ ] [ ]

| | |
|---|---|
| Health worker didn't visit | - 01 |
| Out of place | - 02 |
| Didn't know about it | - 03 |
| Felt healthy and tablets were not needed | - 04 |

| | |
|---|---|
| Nobody advised | - 05 |
| Mother-in-law against | - 06 |
| Husband against | - 07 |
| No belief/faith | - 08 |
| Busy with household work | - 09 |
| Afraid of tablets | - 10 |
| Others (specify) _____ | - 11 |
| Can't say | - 97 |
| N.A. | - 98 |

3.15 Did you receive any other service? 158

Yes - 1 No - 2

3.16 What was your normal dietary intake during pregnancy?

| Diet | Below normal | Normal | Above normal | |
|---|---|---|---|---|
| Cereals (chapatis/bowls/ragi) | 1 | 2 | 3 | 159 |
| Pulses (grams) | 1 | 2 | 3 | 160 |
| Vegetables | 1 | 2 | 3 | 161 |
| Milk (cups) | 1 | 2 | 3 | 162 |
| Fish/Meat (weekly) | 1 | 2 | 3 | 163 |
| Egg (weekly) | 1 | 2 | 3 | 164 |
| Fruits | 1 | 2 | 3 | 165 |

3.17 Did you take extra food during the last pregnancy? 166

Yes - 1 No - 2

3.18 Did you avoid some food during the last pregnancy? 167

Yes - 1 No - 2

3.19 Normally how many hours of rest, sleep did you have during the 3rd trimester of your last pregnancy?

| Activity | Duration (in hours) | Was it enough Yes-1, No-2 |
|---|---|---|
| Rest | 168 169 | 170 |
| Sleep | 171 172 | 173 |

3.20 Normally how many hours in a day did you spend in the following activities during the 3rd trimester of your last pregnancy?

| Activity | Duration (in hours) | |
|---|---|---|
| Normal work | 174 | 175 |
| Hard work | 176 | 177 |

3.21 Did the woman suffer from any of the following diseases during 1st pregnancy?

| Diseases | Yes | No | Don't know | |
|---|---|---|---|---|
| Anaemia | 1 | 2 | 8 | 178 |
| Heart disease | 1 | 2 | 8 | 179 |
| Diabetes | 1 | 2 | 8 | 180 |
| High blood pressure | 1 | 2 | 8 | 181 |
| Urinary tract infection | 1 | 2 | 8 | 182 |
| Asthma | 1 | 2 | 8 | 183 |
| Jaundice | 1 | 2 | 8 | 184 |
| Lung disease (TB etc.,) | 1 | 2 | 8 | 185 |
| Malaria | 1 | 2 | 8 | 186 |
| Peptic ulcer | 1 | 2 | 8 | 187 |
| Liver disorder | 1 | 2 | 8 | 188 |
| Other diseases | 1 | 2 | 8 | 189 |

3.22 Which of the following symptoms or signs occur during the last pregnancy

| | Yes | No | Don't know | |
|---|---|---|---|---|
| Excessive vaginal bleeding | 1 | 2 | 8 | 190 |
| High fever | 1 | 2 | 8 | 191 |
| Eclampsia | 1 | 2 | 8 | 192 |
| Others | 1 | 2 | 8 | 193 |

3.23 Conditions during labour

On-set of labour in _____ month of pregnancy 194

Duration of labour for _____ hours 195 196

Type of labour 197

Spontaneous - 1 Induced - 2

3.24 Type of presentation (parts of the baby's body coming) 198

Head - 1 Buttocks - 2 Foot/hand - 3 Others - 4

3.25 Type of delivery 199

Normal - 1 Forceps - 2 Caesarean - 3 Can't say - 8

3.26 Size of the baby at birth 200

Smaller than usual - 1 Usual - 2 Larger than usual-3

3.27 Place of pregnancy termination 201 202

| | | | |
|---|---|---|---|
| Home (mother's place) | - 01 | District hospital | - 07 |
| Home (husband's place) | - 02 | Private hospital | - 08 |
| Other home | - 03 | Nursing home | - 09 |
| Sub-centre | - 04 | Charitable institution | - 10 |
| PHC/PHU | - 05 | Others____specify) | - 11 |
| Taluk hospital | - 06 | | |

3.28. Who assisted the pregnancy termination? 203 204

| | | | |
|---|---|---|---|
| No one | - 01 | JHA(F) (ANM) | - 07 |
| Mother or Mother-in-law | - 02 | JHA(F) (LHV) | - 08 |
| Relatives | - 03 | Govt. doctor | - 09 |
| Friends | - 04 | Private doctor | - 10 |
| Untrained dai | - 05 | Others _____ (specify) | - 11 |
| Trained dai | - 06 | | |

PART – B

(For any maternal Mortality Cases)

(Respondent: Any adult female member of the household)

5.0 Date of death of the mother during the reference period 226 227 228 229 230 231

Record the completed days in two digits, months in two digits and year in two

5.1 Month of gestation at the time of death 232

5.2 At what stage the death occurred 233

| | |
|---|---|
| Before the start of labour pains | – 1 |
| After the start of labour pain but before the baby was delivered | – 2 |
| After the delivery of baby | – 3 |
| Can't say | – 8 |

5.3 If the child was actually delivered, indicate the time between onset of labour and delivery of child (in hours) 234 235

5.4 If death occurred after the delivery, indicate the number of days between delivery and date of death Record the actual days in two digits. If less than one day record "00" 236 237

5.5 Place of death 238

| | | | |
|---|---|---|---|
| Home | – 1 | Private hospital | – 4 |
| Transit | – 2 | PHC | – 5 |
| Govt. hospital | – 3 | Others _____ (specify) | – 6 |

5.6 If death occurred at home who attended the delivery? 239 240

| | | | |
|---|---|---|---|
| Untrained dai | – 01 | SHA (F) | – 06 |
| Trained dai | – 02 | Private doctor | – 07 |
| Relatives | – 03 | Govt. doctor | – 08 |
| Friends | – 04 | Others | – 09 |
| JHA(F) | – 05 | N.A. | – 98 |

5.7 If death occurred at home, why the woman was not taken to the hospital before death for treatment (Record verbatim) 241 242

_____

_____

_____

243 244

5.8 Whether sufficient medical care was provided? Give details including who attended, (Record verbatim)

_____

_____

_____

245 246

5.9 If death occurred at hospital indicate the condition of the woman at the time of taking her to hospital (Record verbatim)

_____

_____

_____

247

5.10 Did anybody attending the delivery inform, the family about the seriousness of the patient's condition?

Yes - 1 No - 2 Can't say - 8

248

5.11 If yes, who informed?

| | | | |
|---|---|---|---|
| Dai | - 1 | Relatives | - 4 |
| Private doctor | - 2 | Friends | - 5 |
| Govt. doctor | - 3 | Others | - 6 |

249

5.12 What were the symptoms of patient before her death?

| | | | |
|---|---|---|---|
| Chills | - 1 | Fits | - 6 |
| Fever | - 2 | Hiccups | - 7 |
| Cramps | - 3 | Deep breathing | - 8 |
| Oedema | - 4 | Others (specify) | - 9 |
| Offensive odour | - 5 | | |

250

5.13 What do you think was the main cause of death?

| | | | |
|---|---|---|---|
| Spontaneous abortion | - 1 | Unexpelled placenta | - 5 |
| Induced abortion | - 2 | Sepsis | - 6 |
| Haemmorrhage before delivery | - 3 | Eclampsia | - 7 |
| | | Tetanus | - 8 |
| Haemmorrhage after delivery | - 4 | Others _____ (specify) | - 9 |

251

5.14 Do you think any pre-existing illness of the woman complicated the delivery and caused her death?

Yes - 1 No - 2

5.15 If yes, what were they?

| | Yes | No | N.A. | |
|---|---|---|---|---|
| Anaemia | 1 | 2 | 8 | 252 |
| Heart disease | 1 | 2 | 8 | 253 |
| Diabetes | 1 | 2 | 8 | 254 |
| High B.P | 1 | 2 | 8 | 255 |
| Urinary tract infection | 1 | 2 | 8 | 256 |
| Asthma | 1 | 2 | 8 | 257 |
| Jaundice | 1 | 2 | 8 | 258 |
| Lung disease (TB etc.) | 1 | 2 | 8 | 259 |
| Malaria | 1 | 2 | 8 | 260 |
| Peptic ulcer | 1 | 2 | 8 | 261 |
| Liver disorder | 1 | 2 | 8 | 262 |
| Cancer | 1 | 2 | 8 | 263 |
| Other diseases _____ (specify) | 1 | 2 | 8 | 264 |

5.16 Do you think this death could have been avoided? 265

Yes - 1 No -

5.17 If yes, give your reason (Record verbatim) 266

N.A. - 0

Maternity Schedule Part - B 267/1

BSR/-